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Q80886
10/816,890 Filed: April 5, 2004
Darryl Mexic (202) 293-7060
Kenichi KATSUMATA, et al.
MOTOR DRIVE APPARATUS AND METHOD OF CONTROLLING AN OPERATION ON THE SAME

FIG. 1

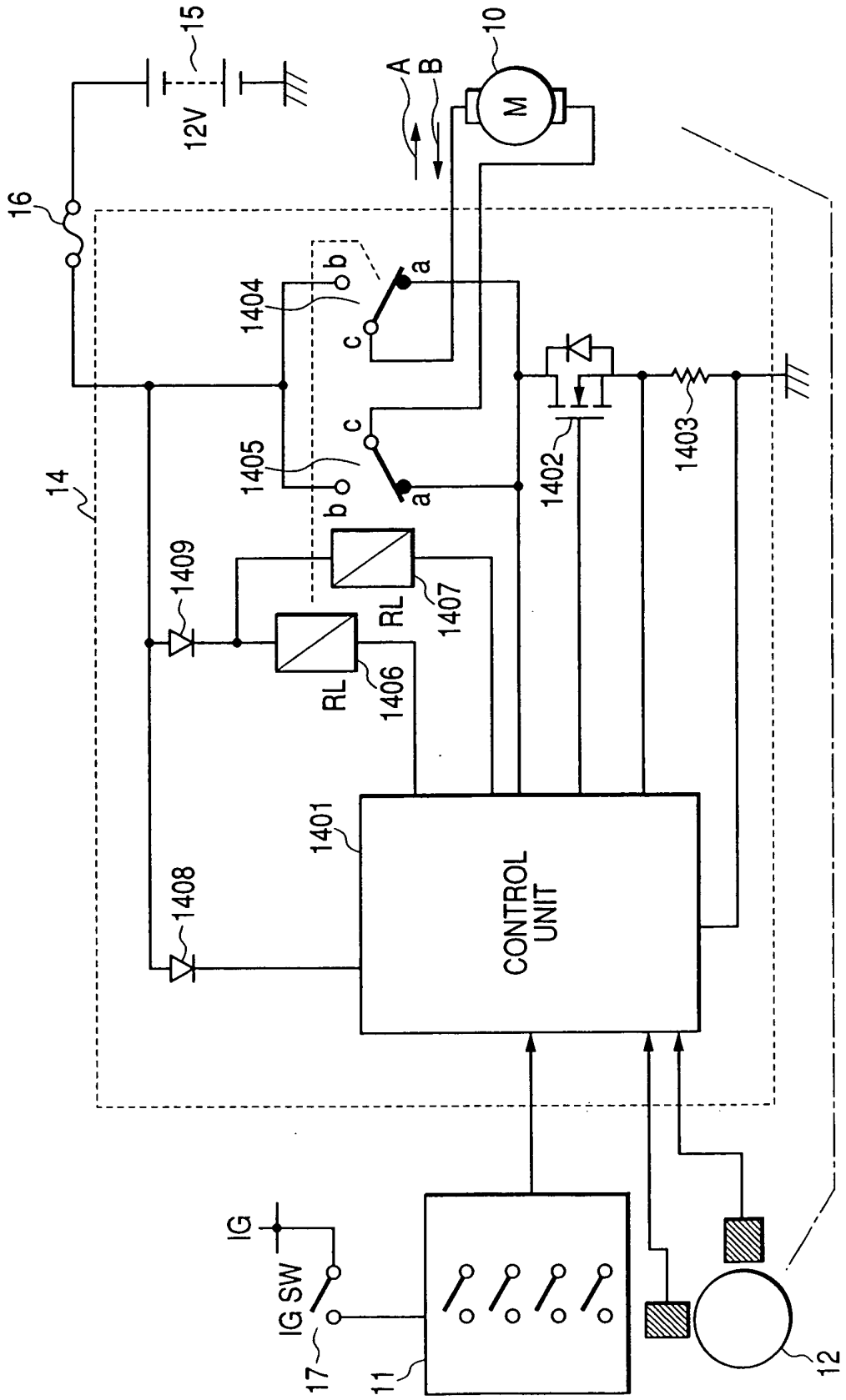

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FIG. 2

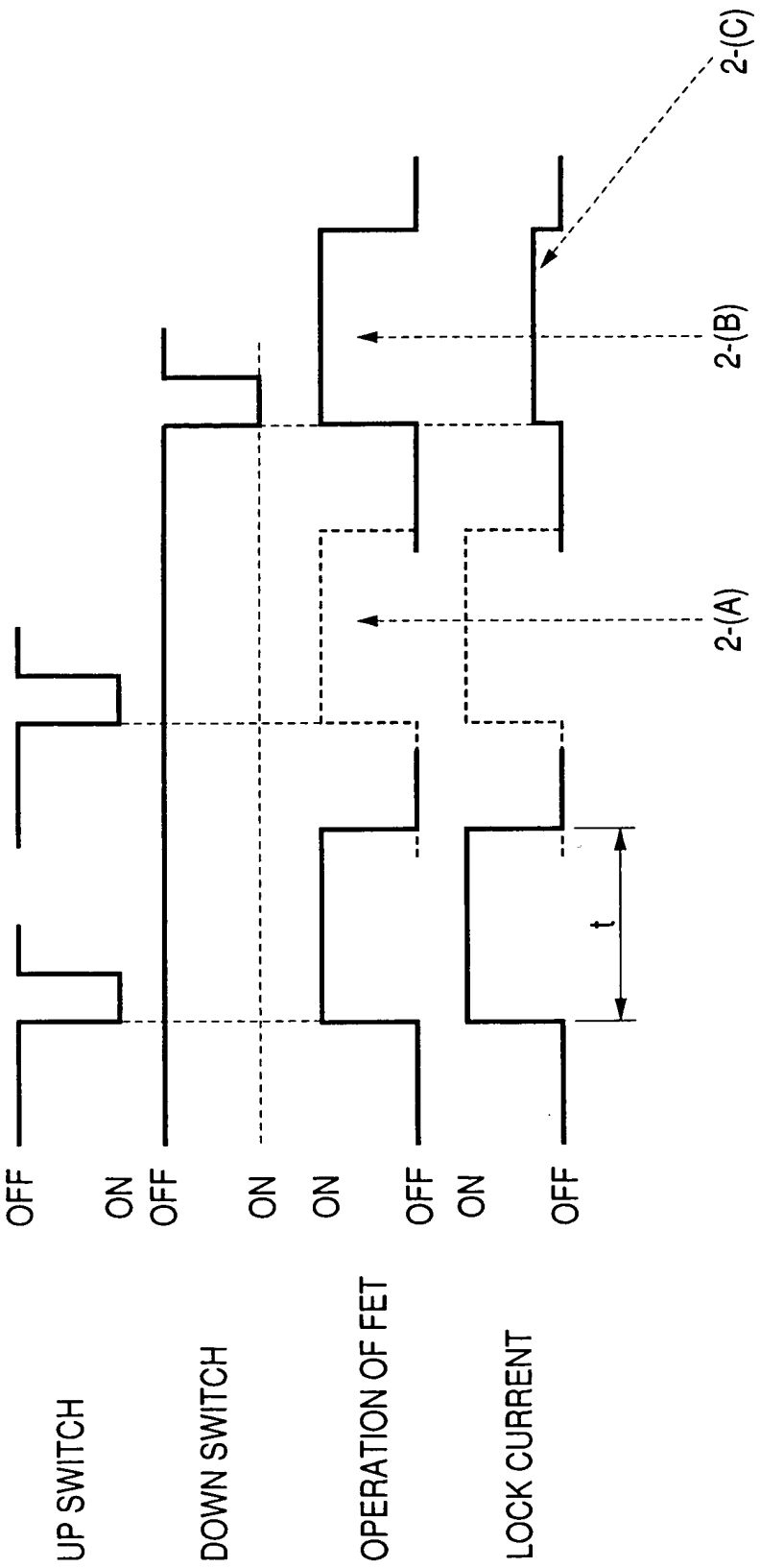

FIG. 3

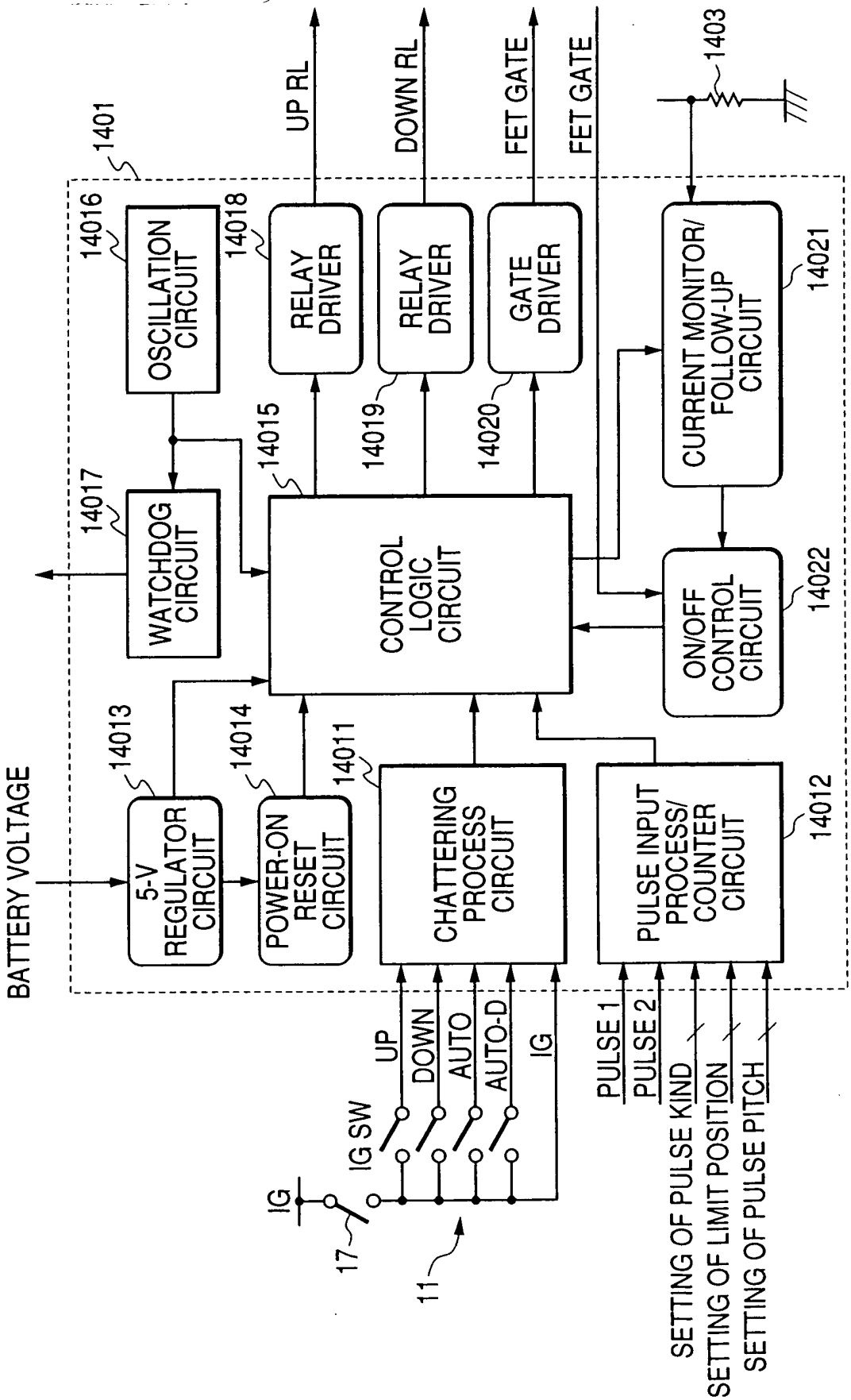
1401
UP RL
DOWN RL
FET GATE
FET GATE
1403
14016
OSCILLATION CIRCUIT
14018
RELAY DRIVER
RELAY DRIVER
GATE DRIVER
CURRENT MONITOR/ FOLLOW-UP CIRCUIT
14021
14017
WATCHDOG CIRCUIT
14015
14019
14020
CONTROL LOGIC CIRCUIT
ON/OFF CONTROL CIRCUIT
14022
BATTERY VOLTAGE
14013
5-V REGULATOR CIRCUIT
14014
POWER-ON RESET CIRCUIT
14011
CHATTERING PROCESS CIRCUIT
PULSE INPUT PROCESS/ COUNTER CIRCUIT
14012
IG SW
UP
DOWN
AUTO
AUTO-D
IG
IG
17
11
PULSE 1
PULSE 2
SETTING OF PULSE KIND
SETTING OF LIMIT POSITION
SETTING OF PULSE PITCH

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FIG. 4

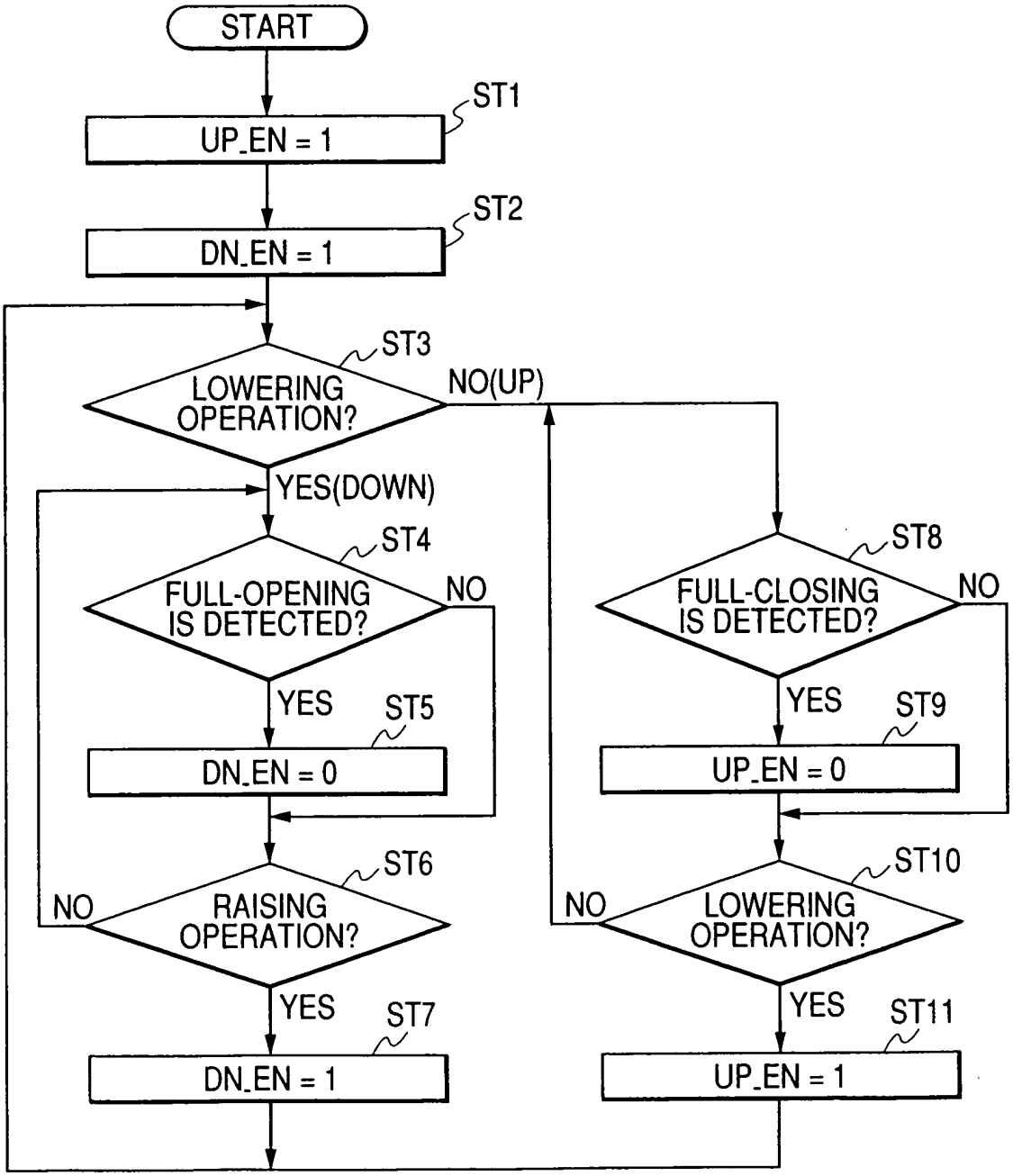

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FIG. 5

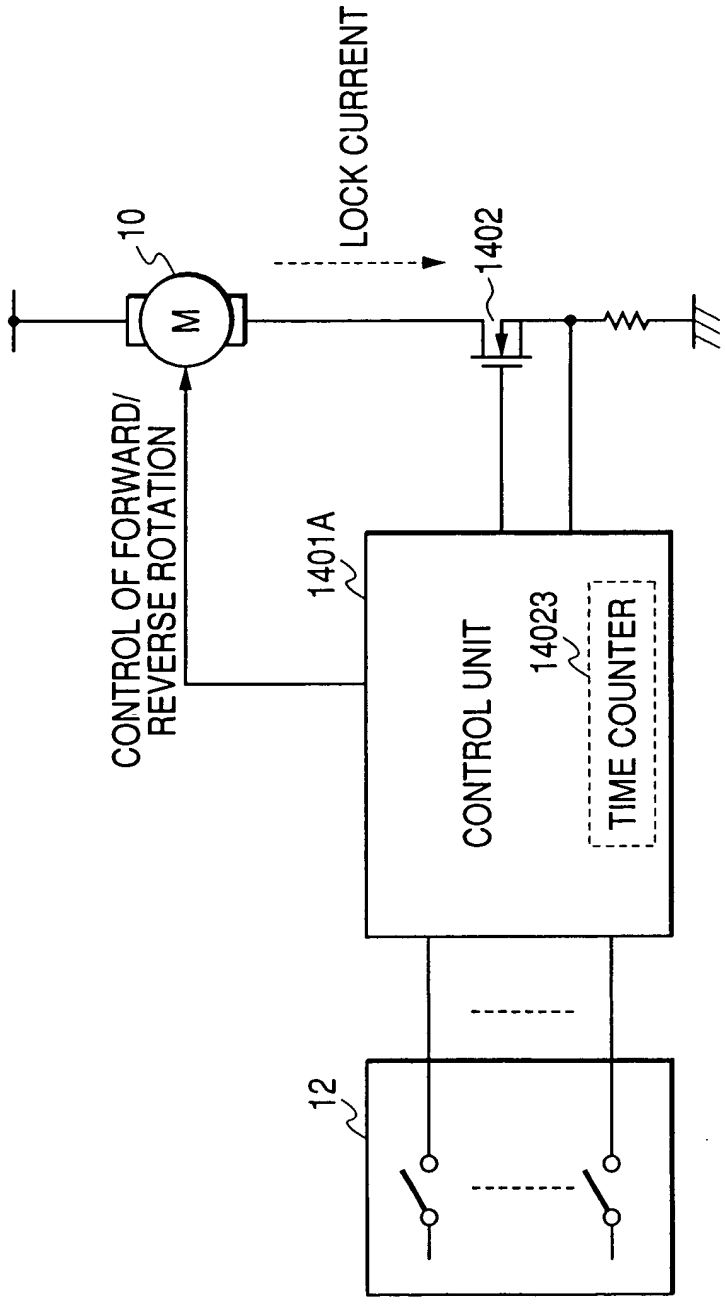

FIG. 6

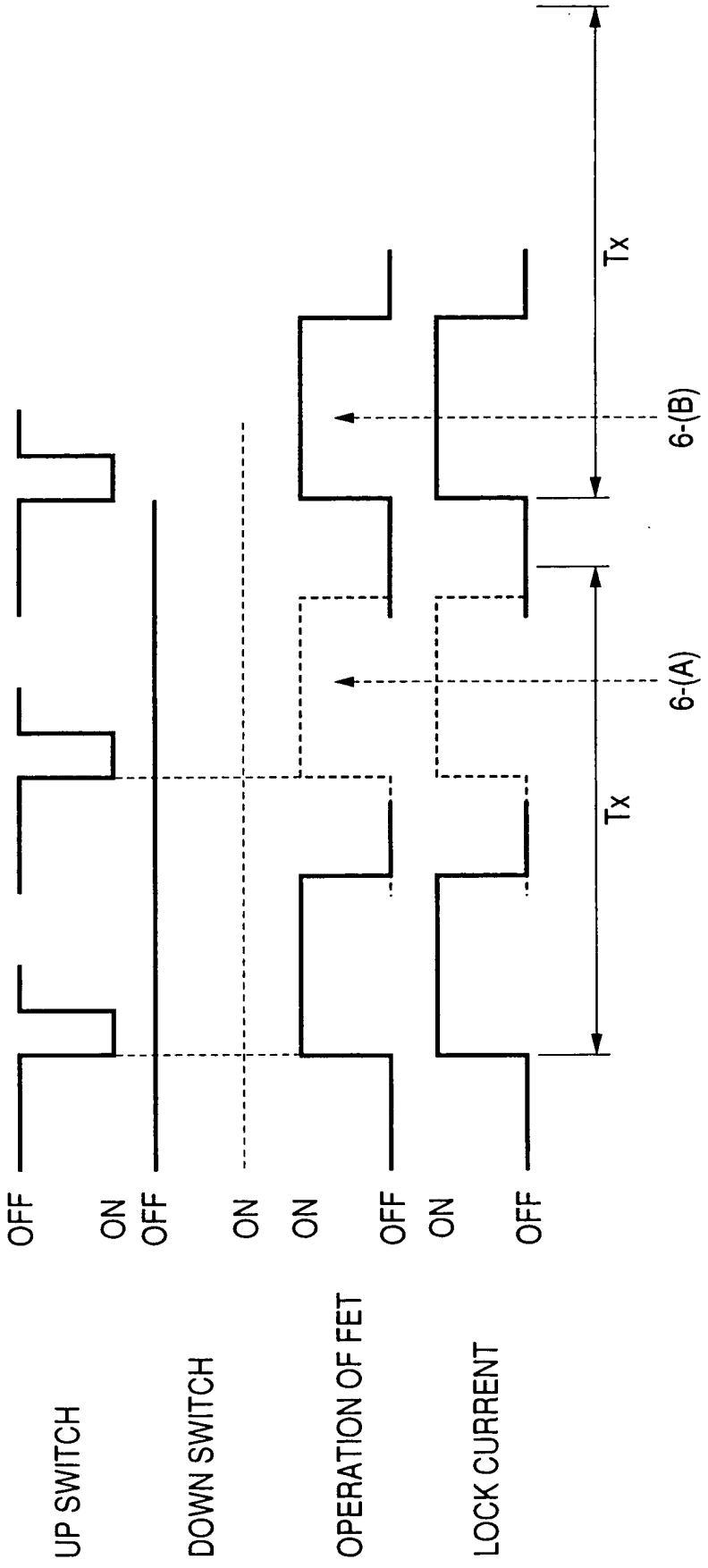
UP SWITCH
DOWN SWITCH
OPERATION OF FET
LOCK CURRENT
OFF
ON
OFF
ON
ON
OFF
ON
OFF
Tx
Tx
6-(A)
6-(B)

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FIG. 7

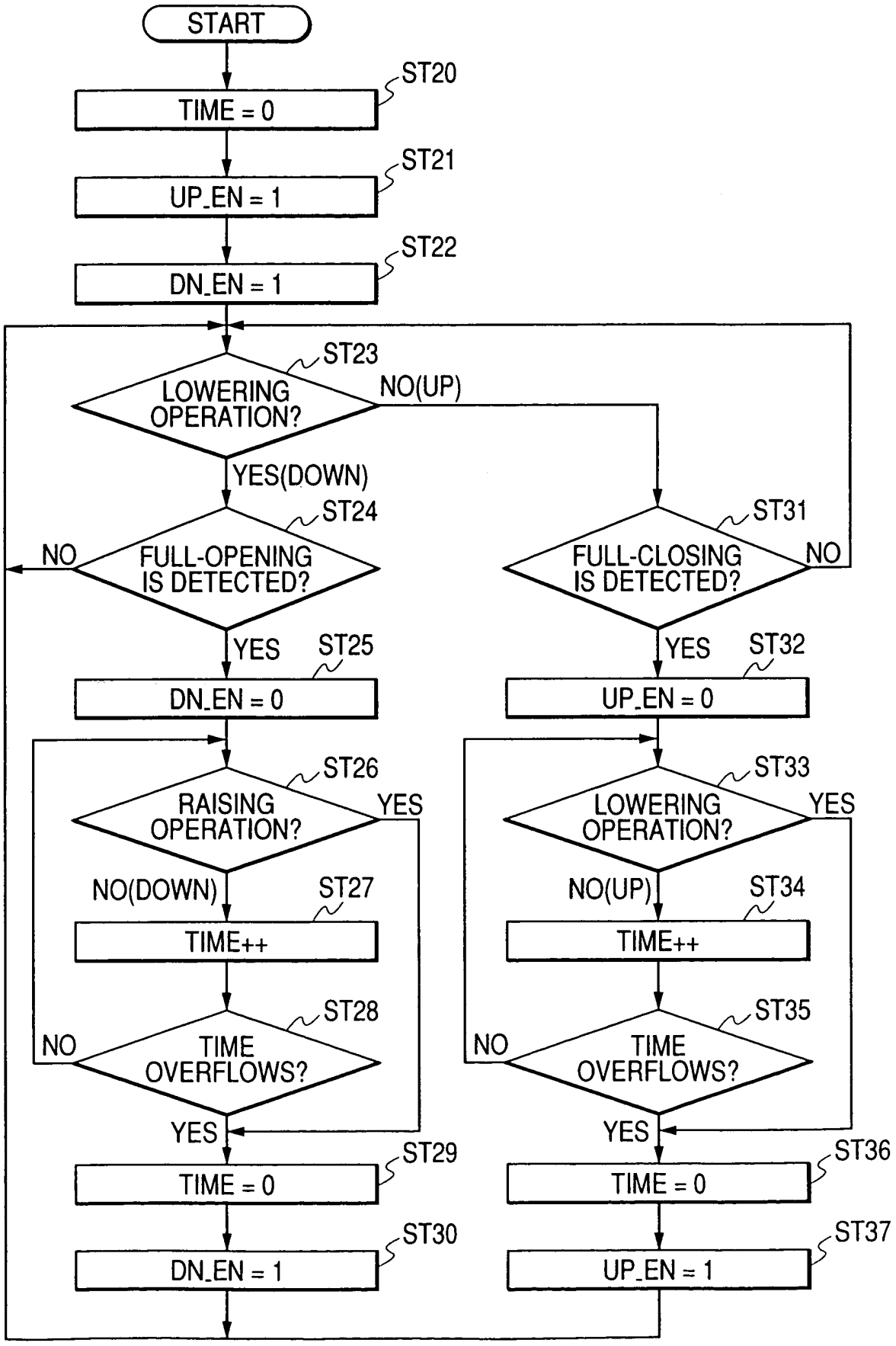

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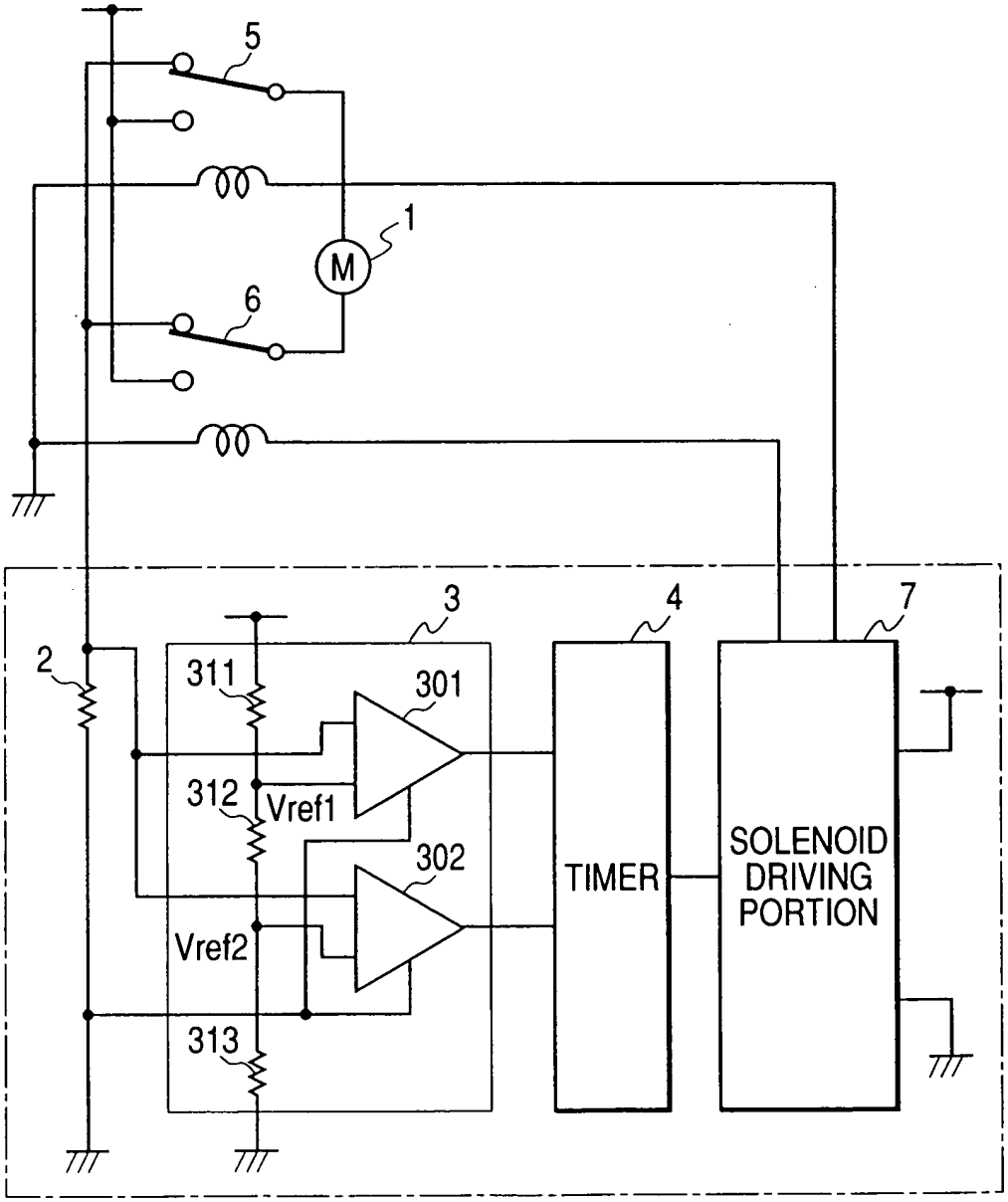
FIG. 8



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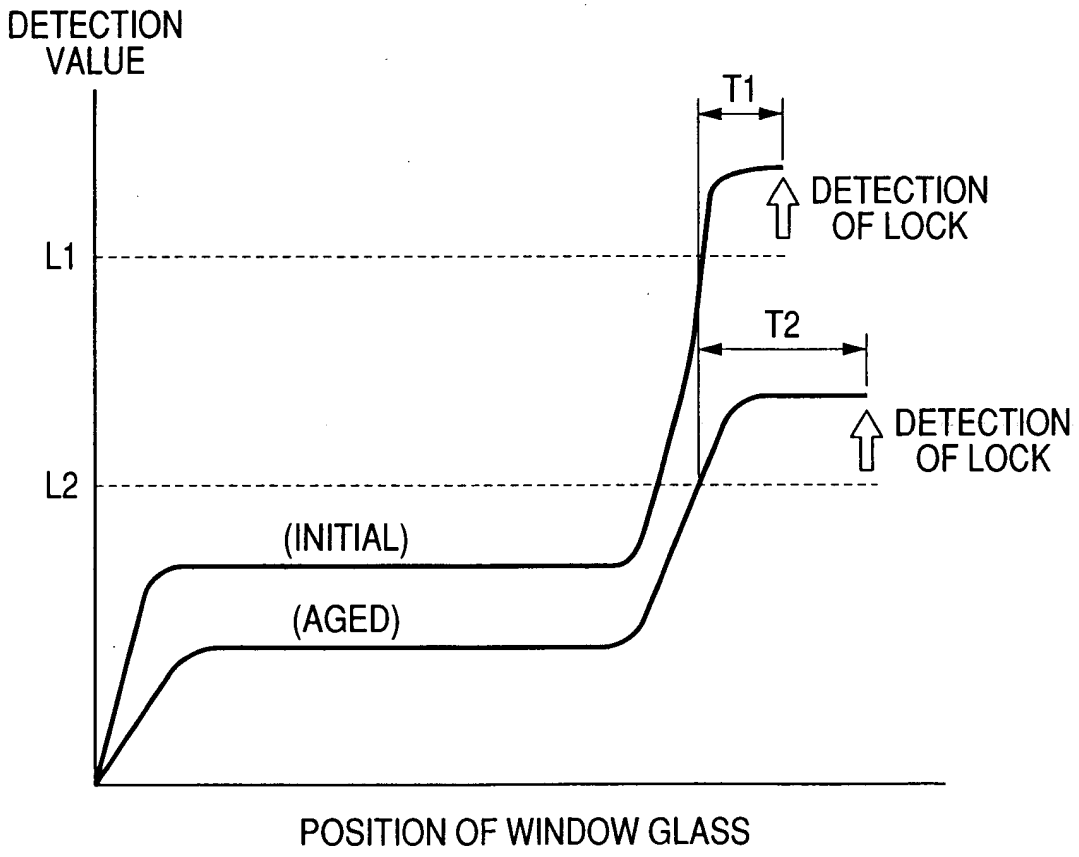
FIG. 9